symphysiotomy in order to prevent a recurrence of the renal lithiasis. We did the right kidney first because the symphysiotomy on the left side is less difficult, there being no vena cava in the way.

In summary I may say that the usual mortality rate after symphysiotomy or hemineph-rectomy for horseshoe kidney is high according to the known literature. A technique developed by the late Dr. Mercier has shown no mortality in a series of 35 cases operated on. We are thus inclined to believe that this technique which is a very simple and easy one to follow will prove to be an advance in the operative procedures used in genito-urinary surgery.

A CASE OF ACUTE TRACHEO-BRONCHIAL DIPHTHERIA IN AN ADULT

By A. B. Houston, R.C.A.M.C.(Ret'd.)

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The gravity of primary acute tracheo-bronchial diphtheria and its rarity in the adult warrant the reporting of such cases. Extension of diphtheritic inflammation to the trachea and bronchi from the larynx or pharynx is well known, particularly in children, but does not present the diagnostic difficulties which cases of primary involvement below the larynx do. In an extensive review of the literature, Toomey[1] (1931) was able to find only two such cases in adults; to which he added two of his own. In a review of case reports in the literature since 1931 I have been unable to find any further such case reports. The present case was observed in an R.C.A.M.C. casualty clearing station in Holland in November, 1945.

J.E.R., aged 24, a previously healthy sergeant was admitted on November 15, 1945 from a field dressing station as a case of mild "short term" febrile respiratory illness, with complaints of chilliness, backache, and a dry irritating soreness of the throat since the evening of November 13, 1945. Temperature was 102.4°, pulse 110, respirations 18; pharynx was clean, and there were a few small non-tender glands bi-laterally at the angles of the mandible. Physical examination was otherwise negative. White blood cells were 9,400 with 73% neutrophils, 24% lymphocytes and 3% monocytes. Urinalysis negative. Throat cultures were taken repeatedly, including nasal swab cultures; these were consistently negative for any pathogens. Temperature fell on admission (see Fig.) and for the next two days the patient felt well and complained only of dryness of the throat for which steam inhalations were given. There were no symptoms or signs to suggest laryngitis nor did these subsequently appear.

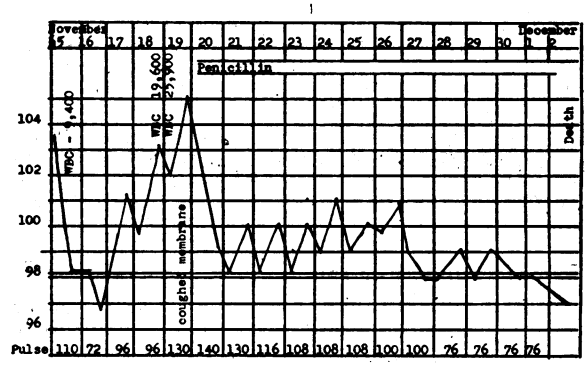

Figure to show daily high-low temperature variation.

On the evening of November 18, the patient became acutely ill and experienced much distress from mucus collecting in the pharynx, which he was unable to clear voluntarily or even with the assistance of mechanical suction. Examination was otherwise unchanged and the white blood cells were 19,600 with 80% neutrophils. Sulfadiazine therapy was started.

A portable chest plate in the semi-recumbent position was taken on the morning of November 19, but was unsatisfactory due to respiratory movement. It was, however, interpreted as showing a diffuse broncho-pneumonic type of infiltration extending from the hila to both lung bases. Marked deterioration was noted at this time with an obstructive type of dyspnœa, moderate peripheral cyanosis, and weakened breath sounds generally over both lung fields. White count was 25,900 with 85% neutrophils. About 10.00 p.m. that evening the patient coughed up several lengths of grey-white membrane showing the transverse markings of the tracheobronchial tree. These were immediately examined but showed no significant organisms either on direct examination or on culture which was negative for *Corynebacterium diphtheriæ*. Diagnosis was now between acute membranous (non-specific) tracheobronchitis and/or acute tracheobronchial diphtheria. To be on the safe side 120,000 units diphtheria antitoxin was given, supplemented with 40,000 units of penicillin intramuscularly, followed by 20,000 units every three hours. Oxygen therapy had been started earlier in the day. A bronchoscope was not available.

The patient deteriorated still further the following two days and, although the temperature tended to subside, he continued to show cyanosis and obstructive dyspnœa with mucus accumulation in the throat. Nursing care was carried out in the head-low position and general supportive measures were applied. Respirations were 40 to 60 per minute during this period and the blood pressure was maintained at 100/70. He continued to cough up small pieces of membrane, all of which were cultured and on November 21, one of these was reported showing C. diphtheriæ (which was subsequently identified as Gravis strain) and a further 80,000 units antitoxin was given. During this time the patient obtained no sleep, as all his attention was given to breathing, and he became extremely fatigued. Examination on November 21, 1945 showed atelectasis of the lower lobe of the right lung with mediastinal shift to the right.

During November 22 and 23, some improvement was apparent. Some difficulty in swallowing was noted on November 23, and nasal tube feedings were commenced. More detailed examination at this time revealed: marked prostration and weight loss; pupillary reflex reactions normal; pharynx unchanged; loss of swallowing reflex; no palatal paralysis; breathing entirely diaphragmatic; intercostal muscles apparently paralyzed; still evidence of collapse of the lower lobe of the right lung; all deep reflexes absent together with absent abdominals and cremasterics; no sensory changes; heart sounds soft, rate regular 100 to 130; blood pressure 98/75. A Drinker respirator was not available but a Paul-Bragg

pulsator was obtained. Digitalin gr. 1/100 t.i.d. was started.

From November 23 to 27, patient showed moderate improvement. He was uncomfortable in the pulsator which was difficult to adjust to his rapid and varying respiratory rate and which was, therefore, only used at his request when he felt fatigued. He seemed to obtain some relief in this way and slept well without the pulsator, at night. No cyanosis was now evident and mucus was no longer troublesome although he continued to cough up bits of membrane. Air entry had returned to a degree at the right lung base and sticky râles were present in both lung fields. Digitalin was discontinued on November 27, due to appearance of extra-systoles.

Neurological examination on November 28, 1945 showed marked weakness but no true paresis of limb muscles; paralysis of the intercostal muscles; tendon jerks present on the left but only biceps and quadriceps jerks present on the right and these were weak; abdominals absent, cremasterics present; no other neurological findings—swallowing reflex had returned and there were no changes in pupillary reflex activity. Toward the evening of November 29, there was some evidence of returning function of intercostal muscles which continued to improve on November 30, 1945.

On December 1, he failed rapidly with development of cardiac dilatation, engorgement of the liver, ascites, falling blood pressure (64/12) and cyanosis; pulse rate during this terminal episode was 70 to 80 per minute and he died at 10.15 a.m. December 2, on the 19th day of his illness.

Urinalysis, negative on admission, showed albumin ++ and casts (1 or 2 per high power field) from November 20, to the end. Positive cultures were obtained only from membrane coughed up. All others, including blood culture and repeated cultures from the nose and throat were negative for *C. diphtheriæ*. Information as to the presence or absence of previous protective inoculations was not obtained.

It is interesting to note that at no time was there any paralysis of the accommodation-convergence reflex —the so-called "specific" paralysis of diphtheria.

A summary of the post mortem examination is as follows: (1) dilation and hypertrophy of the heart; (2) acute parenchymatous myocarditis; (3) ulceration of the mucosa of the epiglottis, trachea, and large bronchi; that on the epiglottis was apparently a more recent process than that in the trachea and bronchi; and this together with the clinical evidence seemed to indicate that it was secondary to the process in the trachea and bronchi; (4) atelectasis of the lungs; (5) thrombosis and infarction of the lungs; (6) resolving bronchopneumonia; (7) passive venous congestion of the liver, spleen and kidneys; (8) focal necrosis of the liver.

I am indebted to Brigadier C. S. Thompson, D.G.M.S., R.C.A.M.C., for permission to publish this case; also to Major O. A. Schmidt, R.C.A.M.C., for the bacteriological work and autopsy report; to Lieut.-Col. R. A. Mustard, R.C.A.M.C. for notes regarding the course of the illness in the last two days, after I had left the unit; to Lieut.-Col. Arthur Parks, R.C.A.M.C., who saw the case in consultation on November 23, 1945.

REFERENCE

1. TOOMEY, N.: *Radiology*, 21: 130, 1933.

SPECIAL ARTICLE

SOME ASPECTS OF THE MEDICAL PROFESSION IN SWEDEN

By Arvid Wallgren, M.D.*

Stockholm, Sweden

MEDICAL EDUCATION

When the Swedish youth has finished his gymnasium, at which time he is about 19 years of age, and if he intends to study medicine, he has three different medical schools to choose between; the Universities at Uppsala and Lund and the Carolinian Medico-Surgical Institute in Stockholm. The number of students that can be accepted at the beginning of the courses twice a year is limited, 25 at each of the universities and 50 in Stockholm, thus 200 medical students annually. This limitation is partly due to the desire to facilitate the teaching, which aims as far as possible at individual instruction in Sweden, the maxim followed being that the fewer the students the more they learn, and partly due to a wish to produce no more than the required number of physicians. The result of this limitation of the number of medical students accepted is that there is usually fairly severe competition among them; those students who have had the best examination results at the gymnasium, which in general means those who are most ambitious and gifted, are selected. Medical students generally can thus be regarded as a picked group with good intellectual prerequisites to become good physicians.

The medical studies are divided into two separate stages, the pre-clinical and the clinical.

*[*The following note has been supplied by Dr. H. P. Wright, of Montreal, through whose kindness Dr. Wallgren's article was made available.*—EDITOR.]

Dr. Arvid Wallgren is one of the professors of pædiatrics at the Karolinska Institute and Director of the Department of Pædiatrics in Norrtull Hospital, Stockholm, where the famous Fredrik Berg is said to have established the first pædiatric clinic in Europe, in 1845, the first physician in Europe to occupy a separate chair in pædiatrics.

Dr. Wallgren is a remarkable man and speaks several languages quite fluently. For example, it was my personal experience to be present in Rome in 1937, at the Fifth International Pædiatric Conference, when Dr. Wallgren was listed to read a paper in French (the three official languages of the Conference were English, French and German). On looking over the audience, he rightly concluded that there were more Germans than French present and therefore read his paper in German. Unfortunately, the English speaking representation was small or he might very well have translated it into English.

Dr. Wallgren is a well known author and is familiar to many Canadian and American physicians, particularly on account of his valuable contribution on "Childhood Tuberculosis" in Nelson Loose Leaf Medicine, and as one of the co-authors of "Opera Pædiatrica" published in Sweden in 1945. The article in the current issue of the *Journal* was prepared by special request and is a reliable account of medical conditions by a well balanced and objective thinker.—H.P.W.